

~~58~~
64 65

What is claimed is:

1. A protein characterized by having the ability to bind the cytoplasmic region of a Fas receptor.
2. Purified mammalian protein of claim 1.
3. A polypeptide fragment of the protein of claim 1.
4. The polypeptide of claim 3, wherein the polypeptide consists of at least the C-terminal portion of the protein.
5. The polypeptide of claim 3, wherein the polypeptide consists of at least the N-terminal portion of the protein and characterized by having the ability to induce apoptosis in a suitable cell.
6. The protein or polypeptide of any of claims 1, 3, 4 or 5 which has been recombinantly produced and isolated from a host cell.
7. A nucleic acid molecule coding for a protein or polypeptide characterized by having the ability to bind the cytoplasmic domain of the Fas receptor.
8. A nucleic acid molecule coding for the polypeptide of claim 5.
9. A nucleic acid molecule that is complementary to the nucleic acid molecule of claim 7 or 8.
10. A composition comprising the nucleic acid molecule of claim 7.

65
59- 66

11. A composition comprising the nucleic acid molecule of claim 8.

12. A host cell comprising the nucleic acid molecule of claim 7 or 8.

5 13. A host cell comprising purified protein of claim 1 or the polypeptide of claim 5.

14. A pharmaceutical composition comprising the host cell of claim 11 and a pharmaceutically acceptable carrier.

10 *Sub a2* 15. An antibody capable of specifically forming an antibody complex with the protein of any of claims 1 to 5.

16. A nucleic acid molecule coding for the antibody of claim 14.

15 17. An agent characterized by having the ability to inhibit the binding of the mammalian protein of claim 1 to the cytoplasmic domain of a Fas receptor.

20 18. An agent characterized by inhibiting Fas-associated apoptotic cell death.

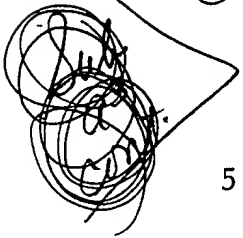
19. A hybridoma cell line which produces the antibody of claim 15.

25 20. A process for producing a protein of claim 1 or the polypeptide of claim 5, which comprises providing a host cell, wherein the host cell contains a nucleic acid molecule encoding the mammalian protein and wherein the nucleic acid molecule is operatively linked to a promoter of RNA transcription, growing the host cell under suitable conditions such that the nucleic acid is transcribed and translated into protein.

30

66
-60- 67

Sub
D2



5

21.

A process for chemically synthesizing the mammalian protein of claim 1 or the polypeptide of claim 5, which comprises providing the amino acid sequence of the protein or polypeptide to be synthesized and chemically linking the amino acids in an orientation and under suitable conditions so as to produce the polypeptide.

22.

A process for chemically replicating the nucleic acid molecule of claim 7 or 8, which comprises providing the nucleic acid sequence of the nucleic acid and chemically linking the nucleotides in an orientation and under suitable conditions so as to produce the nucleic acid.

10

Sub
D3
15

23.

The protein or polypeptide produced by the process of claim

20
21.
1

24.

The protein or polypeptide produced by the process of claim

20
22.
1

20 25.

A method of modulating a cellular function regulated by the Fas receptor pathway in a suitable cell, which comprises introducing into the cell a FADD nucleic acid and growing the cell under suitable conditions such that the nucleic acid is transcribed and translated into FADD protein in the cell.

25

26.

The method of claim 25, wherein the introducing of the nucleic acid molecule is effected *in vitro*, *in vivo* or *ex vivo*.

27.

A method of modulating cellular function regulated by the Fas receptor pathway in a subject, which comprises administering to the subject a FADD nucleic acid.

30

67 68

28. A method for maintaining T cell viability, comprising introducing into the T cell an effective amount of the agent of claim 18 and under suitable conditions such that T cells remain viable.

5

29. A method for screening for an agent useful to modulate cellular function regulated by the Fas receptor pathway, the method comprising the steps of: a) providing a Fas cytoplasmic domain receptor bound to a solid support;
b) contacting the agent to be tested with the receptor bound support of step a) under conditions favoring binding of the cytoplasmic domain to the receptor to FADD;
c) contacting detectably-labeled FADD to the solid support of step b) under conditions favoring binding of Fas cytoplasmic domain receptor to FADD;
d) detecting the presence of any complex formed between the Fas receptor and FADD to form Fas receptor-FADD complex;
e) the absence of complex being indicative that the agent inhibits binding of FADD to the Fas receptor; and
f) analyzing the results of step d) to determine how the agent modulates the cellular function regulated by the Fas receptor pathway.

10

15

20

30. A method for screening for an agent useful to modulate cellular function regulated by the Fas receptor pathway, the method comprising the steps of: a) providing a Fas cytoplasmic domain receptor bound to a solid support;
b) contacting detectably-labeled FADD to the solid support of step a) under conditions favoring binding of the cytoplasmic domain receptor to FADD;

25

30

68 69
62

- c) contacting the agent to be screened with the receptor bound support of step b) under conditions favoring binding of the cytoplasmic domain to the receptor to FADD;
- d) detecting the presence of any complex formed between Fas receptor and FADD to form Fas receptor-FADD complex; and
- e) the absence of complex being indicative that the agent competitively inhibits binding of FADD to the Fas receptor; and
- f) analyzing the results of step e) to determine how the agent modulates the cellular function regulated by the Fas receptor pathway.

5
Sub E3
cont
10

Add
C4 & D4, E7, F7

~~Add~~